AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) A process for the production of a biocompatible crosslinked polydensified monophasic gel, comprising the steps of:

(a) starting a crosslinking reaction of a predetermined quantity of at least one biocompatible polymer in solution by the addition of a quantity of crosslinking agent in a first volume of a reaction mixture, and

(b) crosslinking said quantity of polymer,

followed by the successive steps consisting of:

(c) adding a supplemental quantity of polymer of a molecular weight higher than 500,000 Da in solution with dilution of the reaction mixture so as to decrease the overall concentration of the polymer in ~~solution~~ a second volume of the reaction mixture, ~~and~~

(d) continuing crosslinking in the second volume of the reaction mixture, and

(e) stopping the crosslinking reaction by elimination of the crosslinking agent, to produce the polydensified monophasic gel.

2. (currently amended) The process according to claim 1, wherein the step of starting a crosslinking reaction is carried out in a pH basic medium.

3. (currently amended) The process according to claim 1, wherein the step of starting a crosslinking reaction is carried out in ~~an acid~~ a pH acidic medium.

4. (currently amended) The process according to claim 1, wherein a supplemental quantity of crosslinking agent is added prior to step c) ~~during the step of adding a supplemental quantity of polymer~~.

5. (previously presented) The process according to claim 1, wherein the step of stopping the crosslinking reaction is carried out by dialysis.

6. (previously presented) The process according to claim 1, wherein the polymers are of natural origin.

7. (previously presented) The process according to claim 6, wherein the polymers of natural origin are compounds selected from the group consisting of: hyaluronic acid, chondroitin sulfate, keratan, keratan sulfate, heparin, heparin

sulfate, cellulose and its derivatives, alginates, xanthane, carrageenan, proteins or nucleic acids.

8. (previously presented) The process according to claim 6, wherein at least one of the polymers of natural origin is a polymer not naturally present in the human body, selected from the group consisting of: cellulose and its derivatives, alginates, xanthane, carrageenan, and a polymer which is crosslinked with at least one polymer naturally present in the human body selected from the group consisting of: hyaluronic acid, chondroitin sulfate, keratan, keratan sulfate, heparin, heparin sulfate, proteins or nucleic acids.

9. (previously presented) The process according to claim 1, wherein the crosslinking agent is a bifunctional or polyfunctional molecule comprising components selected from the group consisting of epoxys, epihalohydrins and divinylsulfone.

10. (currently amended) A biocompatible crosslinked polydensified monophasic gel prepared by the process according to claim 1.

11. (currently amended) The gel according to claim 10, comprising at least one ~~dispersed~~ active ingredient dispersed therein.

12. (previously presented) A method to separate, replace or fill a biological tissue or increase the volume of said tissue or to supplement or replace a biological fluid comprising injecting the gel according to claim 10 in said tissue.

13. (previously presented) The process according to claim 2, wherein a supplemental quantity of crosslinking agent is added during the step of adding a supplemental quantity of polymer.

14. (previously presented) The process according to claim 3, wherein a supplemental quantity of crosslinking agent is added during the step of adding a supplemental quantity of polymer.

15. (previously presented) The process according to claim 2, wherein the step of stopping the crosslinking reaction is carried out by dialysis.

16. (previously presented) The process according to claim 3, wherein the step of stopping the crosslinking reaction is carried out by dialysis.

17. (previously presented) The process according to claim 4, wherein the step of stopping crosslinking is carried out by dialysis.

18. (previously presented) The process according to claim 2, wherein the polymers are of natural origin.

19. (previously presented) The process according to claim 3, wherein the polymers are of natural origin.

20. (previously presented) The process according to claim 4, wherein the polymers are of natural origin.

21. (new) A process for the production of a biocompatible crosslinked polydensified monophasic gel, consisting of the successive steps of:

(a) starting a crosslinking reaction of a predetermined quantity of at least one biocompatible polymer in solution by the addition of a quantity of crosslinking agent in a first volume of a reaction mixture, and

(b) crosslinking said quantity of polymer,

(c) adding a supplemental quantity of polymer of a molecular weight higher than 500,000 Da in solution with dilution of the reaction mixture so as to decrease the overall

concentration of the polymer in a second volume of the reaction mixture,

(d) continuing crosslinking in the second volume of the reaction mixture, and

(e) stopping the crosslinking reaction by elimination of the crosslinking agent, to produce the polydensified monophasic gel.

22. (new) The process according to claim 1, wherein the supplemental quantity of polymer is added in step c) in an amount of 10% of the predetermined quantity is step a).

23. (new) The gel according to claim 10, wherein the degree of crosslinkage varies, and comprising crosslinked hubs interconnected by gel having a quantity of crosslinkage that progressively decreases from that of the hubs.

24. (new) The gel according to claim 23, wherein the crosslinked hubs have a quantity of crosslinkage of about 25%, and the quantity of crosslinkage of the gel interconnecting the crosslinked hubs progressively decreases to about 1%.

25. (new) A biocompatible crosslinked polydensified monophasic gel prepared by the process according to claim 21.